



MASSEY UNIVERSITY

New Zealand Vocational Education & Training Research Forum

Wellington, 28 April 2011

New Zealand Managers' Low Literacy: Does It Matter?

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*Or: Does New Zealand need more  
managers like Sherlock Holmes, or more  
like Dr Watson?*

# The nature of managerial work – it's more oral-experiential than literate

Managers work fast, favouring **informal, oral** communication: “significant activity is interspersed with the trivial in no particular pattern” (Mintzberg, 1973, p. 31). “Their activities are typically characterized by brevity, variety, fragmentation, and discontinuity” (Mintzberg, 2009, p. 19).

Managers like a fire-fighting work-style involving **almost continuous oral communication** (Stewart, 1967; Mintzberg, 2009) to manage their activities and routines.

Mintzberg (2009): “unlike other workers, the manager does not leave the telephone, the meeting, or the e-mail to get back to work. These contacts *are* the work” and “**Gossip, hearsay, and speculation** form a good part of the manager’s information diet” (p. 26).



# Why are managers more inclined to orality than to print literacy?

Managers' work is more **tactical** than strategic. They are more dependent on face-to-face and phone-mediated rather than print-based interactions.

Information from oral sources is more **up-to-date** and **better quality** than what is available in the (more dated) print modes. Information from oral sources can also be **tested** for **immediacy** and **salience**, whereas that from print typically cannot.

Hence managers **distrust or neglect** print information sources (Mintzberg, 1973, 2009). In New Zealand, all of this is reinforced by the strong national culture of **no. 8 wire** thinking – more about this later.



# N.Z. managers' prose literacy

**Prose** literacy refers to the ability to read and make decisions from **continuous text** such as a newspaper article.

**Document** literacy refers to **discontinuous text** such as in forms, schedules, charts or graphs.

Prose literacy is the more important of the two in assessing a person's ability to follow (or advance) a complex argument in a written document.

According to the ALL (2006) survey, about 76% of N.Z. managers are either at the **minimum** level (level 3) needed for work in a modern, complex society, or **below** (levels 1 and 2).



# New Zealand managers' prose literacy is significantly less than professionals'

## Managers' prose literacy

Level	
5 Very good	2.2%
4 Good	21.7%
3 Medium	48.2%
2 Poor	23.4%
1 Very poor	4.5%

## Professionals' prose literacy

Level	
5 Very good	2.2%
4 Good	29.6%
3 Medium	50.3%
2 Poor	14.8%
1 Very poor	3.2%

ALL (Adult Literacy and Life Skills Survey), 2006.



# Managers' numeracy compared to professionals' is also worth noting

## Managers' numeracy

Level	
5 Very good	3.9%
4 Good	21.9%
3 Medium	40.3%
2 Poor	25.4%
1 Very poor	8.6%

## Professionals' numeracy

Level	
5 Very good	6.4%
4 Good	28.3%
3 Medium	39.5%
2 Poor	20.4%
1 Very poor	5.4%

ALL (Adult Literacy and Life Skills Survey), 2006.



# Individuals' skills as measured by the ALL survey, 2006. Tasks at each level:

**Level 1 (0–225):** the ability to read simple documents, accomplish literal information-matching with no distractions, and perform simple one-step calculations.

**Level 2 (226–275):** can search a document and filter out some simple distracting information, achieve low-level inferences, and execute one- or two-step calculations and estimations.

**Level 3 (276–325):** more complex information filtering, sometimes requiring inference, manipulating mathematical symbols, perhaps in stages.

**Level 4 (326–375):** can integrate information from a long passage, use more complex inferences; complete multiple-step calculations requiring some reasoning.

**Level 5 (376–500):** can make high-level inferences or syntheses, use specialised knowledge, filter out multiple distractors, and use abstract mathematical ideas with justification.





# Learning to read vs. reading to learn

Often ALL levels one and two are described as “**learning to read**”

Level three is considered as the most basic level of ability in “**reading to learn**”

Levels four and five are more advanced in reading to learn (Reder & Bynner, 2009).



Meanwhile there is much emphasis on the need to  
**upskill the workforce**

The public discourse has been strongly around workers' (rather than managers') insufficient skills.

To date there has not been much attention paid to managers' literacy or numeracy.

However managers with low literacy tend:

**(a)** to be unaware that they have low literacy,

**(b)** not to realise the benefits of possessing good levels of print literacy

**(c)** not to support the building of better literacy at work.



# The literacy **brain** and the literacy **mind**

Together brain and mind refer to the **hardware** and **software** of print literacy.

**Cognitive theorists** hold that print literacy greatly enhances a person's cognitive and reasoning ability (“**the literacy brain**” – Donald, 2001, p. 302).

Likewise **educationalists** talk about “**the literacy mind**” (Booth, 2006, p. 6). This refers to constant use of literacy in everyday life.

Policy bureaucrats and politicians worldwide have been convinced that enhancements to both brain and mind are needed.



We used to describe ‘**knowledge work**’ as something distinct from other kinds of work

but Farrell (2006) argues that:

“the transformation of the global economy is **reframing virtually all work as ‘knowledge work’** in the sense that the active production and application of knowledge keeps all businesses operating in IT-enabled global networks of production” (p. 13).



Many think that **all** jobs are starting to demand higher levels of print literacy, pointing to:

- the new “**document-driven work culture**” (Belfiore, 2004, p. 22) which demands better literacy
- the Internet-enabled, digitised, **ISO**-compliant workspace (Follinsbee, 2004)
- rising levels of **innovation** and sophistication at work internationally (*Management matters in New Zealand*, 2010).



There are concerns that N.Z. will continue to be overtaken by smarter business practices

“Since 1990 N.Z. has slipped from 10<sup>th</sup> to 20<sup>th</sup> on the GCI” (Global Competitiveness Index) (*Management matters in New Zealand*, 2010, p. 1).

“Looking ahead, given the increasing global competitiveness of India and China and associated **sophistication** in their business strategies, operations and networks, it is likely that the share of better-managed Indian and Chinese firms will also increase” (p. 36).

# Increasing focus on sophistication and innovation of managerial practice

“**Business sophistication** and innovation are key components which are incorporated in the Global Competitiveness Index (GCI) measure and are linked to the competitiveness of nations” (*Management matters in New Zealand*, 2010, p. 36).

**Sophistication** refers in part to managers’ ability to understand different specialisations in their industry or enterprise, while **innovation** depends on their ability to mobilise such specialisations effectively.

# Advances in literacy

- In countries like China and India, managers' education has been advancing quickly, with **rising levels of academic qualifications (and literacy)** as such countries invest heavily in new universities etc.
- This, among other things, helps to account for their improved business performance internationally
- In the New Zealand university scene, many countries which were once our clients are now our competitors, and are increasingly well-resourced.





# Your neural pathways – more abstract or more oral-experiential?

Cognitive theorists argue that managers with low literacy lack sufficient literacy brain and literacy mind, indicating not enough **ability** or **willingness** to come to grips with complex ideas and arguments.

This is not necessarily an argument about intelligence – there are many highly intelligent practitioners of no. 8 wire thinking.

Instead, it is more to do with **habitual neural pathways in the brain**, which tend to favour either **abstractions** (literacy) or **practicalities** (no. 8 wire, oral-experiential work).

Ideally we need both, to avoid the weaknesses of just practical focus or just an abstract orientation.



# Sherlock Holmes and Dr Watson

Sherlock Holmes and Dr Watson go camping in the desert, set up their tent and fall asleep. Some hours later, Holmes wakes his faithful friend.

"Watson, look up at the sky and tell me what you see".

Watson replies, "I see millions of stars."

"What does that tell you?" asks Holmes.

Watson ponders for a minute. "**Astronomically** speaking, it tells me that there are millions of galaxies and potentially billions of planets.

**Astrologically**, it tells me that Saturn is in Leo. **Chronologically**, it appears to be approximately a quarter past three. **Theologically**, it's evident the Lord is all-powerful and we are small and insignificant.

**Meteorologically**, it seems we will have a beautiful day tomorrow.

What does it tell you, Holmes?"



Holmes is silent for a moment, then  
speaks:

*“Watson, you idiot, someone has stolen  
our tent.”*

(Source: Internet joke sites)



# The no. 8 wire approach vs. the specialisations of literacy

This nicely describes the mutual miscomprehension and gulf between the no. 8 wire oral-experiential person and the theoretician.

*Lost in the desert or bush?* You'd much rather be with someone with practical nous rather than someone whose brain is programmed to astronomy, astrology, chronology, theology, meteorology or any other abstract discourse.

Yet most of us, most of the time, are not lost in the bush. Instead, most of us are trying to figure out how to introduce **more innovative, sophisticated products and services** that are internationally best-practice.



# Changing demands in the 21<sup>st</sup> century

Most of us spend our days in modern, complex, **document-driven**, globally-connected enterprises. These feature an increasing pace, urgency, and a necessity for rapid decision-making.

Such decisions must be undertaken, often at a distance, via engaging closely with other people from a variety of specialist disciplines.

These conditions demand people who can move beyond the immediate here and now of their work lives. They need to be able to understand and communicate within different disciplinary, organisational, and ethnic cultures.



# Globalisation is now creating a kind of step-change ...

but similar challenges have happened many times before.

A case in point is in New Zealand's gold-mining history in the 1870s when most of the alluvial gold had run out.

Miners knew there was a lot more gold under the ground. But they realised that to recover it, they had to evolve quickly into something more sophisticated, beyond the no. 8 wire handymen who were competent enough in finding gold in river beds or in shallow deposits.

The hard-rock gold-mining which replaced alluvial gold-mining required people who could train themselves in **particular specialist disciplines** not seen before in New Zealand. Thus specialists started to replace generalists – as is happening today internationally.



# From alluvial to hard-rock gold-mining

My great-grandfather, Archie Sligo, was one of thousands of people who arrived at Port Chalmers from August 1861 onwards seeking gold in Gabriel's Gully.

Archie had left school in Perth, Scotland, probably at about age 15, but was literate (and had a fine copperplate hand).

However for most of his life as an alluvial gold-miner he did not have to be very literate – just 'literate enough'. (This would not be regarded as very literate in 2011.)

However by the 1870s when the alluvial gold was running out, **new specialist competencies** were needed.



# The new specialisations required

by the 1870s gold mining in places like Central Otago and the West Coast as the scale of mining ventures enlarged were quite diverse, but especially included **geology** and **engineering** along with **finance** and the share market.

Archie's son William Sligo (born in 1859 on the Ballarat gold fields) and his brothers were all hard-rock gold miners. In the absence of universities or distance education, all had to be **self-taught** in specialisations such as geology, engineering, and finance. This called for them to ramp up their **literacy** and **numeracy** capabilities far beyond what was typical of their parents' generation.





# Specialist knowledge

As they became familiar with specialist forms of knowledge such as geology, engineering, finance, etc, these miners were essentially learning new ways of **seeing** the world, and thus new languages in which to **describe** the world.

As we become literate within a new specialisation, we learn to **think in different ways**, access **new areas of knowledge**, and **see the world from new perspectives**. We also learn how to **communicate in new ways**, and learn how to **listen and read critically**, assessing the value of what we read and hear (paraphrased from *The New Zealand Curriculum*)



# Three examples of no. 8 wire oral-experiential thinking



# No. 8 wire thinking: instance 1

A.R. Luria was a researcher in Uzbekistan in the 1930s at a time of social transition from orality into literacy. Luria found that oral (not-literate) individuals “identified geometrical figures by assigning them the names of objects, never abstractly as circles, squares, etc.” (Ong, 1982, 50). E.g., if shown a diagram of a **circle**, people were likely to call it a plate. Or if shown a **square** or rectangle, they would call it a window, door, etc.

They had terms such as circles, squares, etc, in their vocabulary. Yet it was habitual behaviour for them to respond thinking of an situation or object (**plate**) rather than in the abstract (**circle**).

This finding suggested an oral culture’s connection to the familiar, grounded and situational, and an avoidance of what was seen as the pointlessly theoretical or intangible.



# No. 8 wire thinking: instance 2

Carpentry apprentices in Australia with low print literacy were asked this question:

You are building a set of shelves, each of which has to be one metre long, and you have four lengths of timber, each 2.5 metres long. How many one-metre shelves can you get from your four lengths of timber?

*Your answer?*



# No. 8 wire thinking: instance 2 (cont.)

People familiar with abstract reasoning recognise this as a mathematical problem and give the answer of eight shelves.

However apprentice carpenters with low print literacy or numeracy are less familiar with abstract forms of discourse. They are more comfortable within their own learned oral-experiential discourse of carpentry.

Zevenbergen (2000) describes how these apprentices tended to **reframe the question**, providing options along the lines of:

- I'd want to see if we could make the shelves a bit shorter, around 800 mil, to avoid waste, or else make them longer
- I don't think I would have bought 2.5 metre timber – why would I do that? You can always get timber of two or three metres
- With the gluing you can do these days if you had 0.5 metre off-cuts you'd definitely want to get more shelves out of them.



People who automatically say the answer is eight probably have a **literacy brain** and **mind** that have become oriented to the abstractions of numeracy and literacy by their training and experience.

Those who reframe the question to provide a practical outcome are likely to be less familiar with the abstractions of numeracy. They tend to work more within oral-experiential no. 8 wire ways of thinking.

Some of the apprentices **may have been able** to do the simple arithmetic, but resisted doing so because of the ingrained nature of their no. 8 wire thinking.



# No. 8 wire thinking: instance 3

In our recent research into Modern Apprentices' literacy learning, our interviews with managers and industry training coordinators typically produced comments such as the following:

- Years ago ... all we did was put a string line up ... we just did it a manual way and it worked
- A lot of us old-school guys have a problem with trigonometry
- When I did my apprenticeship you could get by ... by doing your practical work
- Being a tradesman is practical, about having practical skills
- The qualification doesn't have to be that high-tech.



# No. 8 wire thinking: instance 3 (cont.)

- It's more practical than theory this job anyway
- I certainly wouldn't want to be doing them (the print literacy lessons)
- Building is simple – they're making something that's simple, complicated, very technical
- You can have all the written stuff and theory that you like but at the end of the day it's the job that they produce
- A skilled artisan is equally as important as a skilled literacy person; we need all types to make a complete world (**literacy tutor**).





# Meanwhile, in the 21<sup>st</sup> century ...

**jobs are migrating internationally** up the print-literacy scale to levels four and five

(1= very low literacy, 5= very high literacy)

That is, the literacy and numeracy demands within the modern workplace are progressively increasing under pressures of specialisation and globalisation

Presently only about a quarter of New Zealand managers can be described as “good” (around 22% at level 4, about 2% at level 5) in their prose literacy

Yet there is a tension, in that the **national culture** strongly supports the ethic of the no. 8 wire oral-experiential (anti-specialist) approach, the good bloke/ bloke-ess who can turn their hand to anything.



# A weakness is not the opposite of a strength

New Zealanders take a lot of pride in their national heritage of being able to turn one's hand to anything. We tend to resist the idea that specialists are needed.

Our excellence in **no. 8 wire solutions** to problems is a **major strength** for this country.

However, as Carl Jung pointed out, a weakness is not the opposite of a strength. Instead, a weakness is usually **a strength taken too far**.

Our no. 8 wire oral-experiential culture is **necessary** but **not sufficient**. It is also a strength taken to the point where it is turning into a national weakness.



# Connections between **innovation** and **education**

Internationally there is an increasing assumption that if you want innovation, you need advanced education (which is highly correlated with high literacy), e.g.,

“Cutting the deficit by gutting our investments in innovation and education is like lightening an overloaded airplane by removing its engine. It may feel like you’re flying high at first, but it won’t take long before you’ll feel the impact.”

Barack Obama, *State of the Union Address*, January 2011.



# Literacy closely correlates with higher education

Yet higher education is not the only way to build print literacy. Our 19<sup>th</sup> century ancestors tended to complete their formal education around age 14-16, most never going to university etc. Nevertheless many of them became highly print literate through their own efforts, especially through incessant reading and writing.

That is, we get better at whatever we do a lot of. **TV watching probably makes us stupid.** However, if we often read reasonably complex texts, that builds our print literacy and our ability to think in sophisticated ways.



So the answer to the question posed earlier on is that we need both Sherlock Holmes and Dr Watson thinkers. Each has something unique to offer and each is complementary to the other.

But meanwhile business is speeding up, getting more complex, becoming more inter-related globally, and demanding more sophisticated innovation. This drives an increase in specialised occupations and thus print literacy if we are to succeed internationally.

It's important for managers not to lose their capability in no. 8 wire thinking and their can-do attitude, but they need to reinforce it with sophisticated capability in literacy.



Ideally we'll end up with managers who are fluent in specialisations such as geology, engineering, finance, astronomy, meteorology, theology, you name it, and maybe even astrology –  
but who also can tell when the tent is missing.



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# Acknowledgements

Many thanks to **Dr Niki Murray**, School of CJM, MU, **Dr Alasdair Noble**, Institute of Fundamental Sciences, MU, and to **Mr Paul Satherley**, Research Division, N.Z. Ministry of Education, and N.Z. project manager, ALL survey, for assistance with calculation of statistics for prose literacy and for numeracy from ALL population-weighted data.

